

SEQUENCE LISTING

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 SCHELL, Jozef
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<120> Transgenic Plants with a Modified Activity of a Plastidial ADP/ATP Translocator

<130> 0147-0215P

<140>
<141>

<150> 198 21 442.1 Germany
<151> 1998-05-13

<150> PCT/EP99/03292
<151> 1999-05-12

<160> 7

<170> PatentIn Ver. 2.1

<210> 1
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: sense-primer

<400> 1
cgtgagagat agagagctcg agggtctgat tcaaacc

37

<210> 2
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: antisense-primer

<400> 2
gataacaacag gaatcctgga tgaagc

26

<210> 3
<211> 56
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 3

gaattcctgc agcccgaaaa atccactagt ctcgagaagt ggctgggggc ctttcc 56

<210> 4

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 4

tcttagaggcc aaggcgcccg cttcaacgga ctgcagtgc 39

<210> 5

<211> 589

<212> PRT

<213> Arabidopsis thaliana

<400> 5

Met	Glu	Ala	Val	Ile	Gln	Thr	Arg	Gly	Leu	Leu	Ser	Leu	Pro	Thr	Lys
1				5					10				15		

Pro	Ile	Gly	Val	Arg	Ser	Gln	Leu	Gln	Pro	Ser	His	Gly	Leu	Lys	Gln
							20		25			30			

Arg	Leu	Phe	Ala	Ala	Lys	Pro	Arg	Asn	Leu	His	Gly	Cys	Leu	Tyr	Pro
					35			40			45				

Leu	Thr	Gly	Thr	Arg	Asn	Phe	Lys	Pro	Leu	Ser	Gln	Pro	Cys	Met	Gly
					50			55			60				

Phe	Arg	Phe	Pro	Thr	Lys	Arg	Glu	Ala	Pro	Ser	Ser	Tyr	Ala	Arg	Arg
					65			70			75		80		

Arg	Arg	Gly	Cys	Trp	Arg	Arg	Ser	Cys	Leu	Arg	Arg	Ser	Asp	Ser	Ala
					85			90			95				

Ala	Val	Val	Ala	Ser	Arg	Lys	Ile	Phe	Gly	Val	Glu	Val	Ala	Thr	Leu
					100			105			110				

Lys	Lys	Ile	Ile	Pro	Leu	Gly	Leu	Met	Phe	Phe	Cys	Ile	Leu	Phe	Asn
					115			120			125				

Tyr	Thr	Ile	Leu	Arg	Asp	Thr	Lys	Asp	Val	Leu	Val	Val	Thr	Ala	Lys
					130			135			140				

Gly	Ser	Ser	Ala	Glu	Ile	Ile	Pro	Phe	Leu	Lys	Thr	Trp	Val	Asn	Leu
					145			150			155		160		

Pro	Met	Ala	Ile	Gly	Phe	Met	Leu	Leu	Tyr	Thr	Lys	Leu	Ser	Asn	Val
					165			170			175				

Leu Ser Lys Lys Ala Leu Phe Tyr Thr Val Ile Val Pro Phe Ile Ile
 180 185 190
 Tyr Phe Gly Gly Phe Gly Phe Val Met Tyr Pro Leu Ser Asn Tyr Ile
 195 200 205
 His Pro Glu Ala Leu Ala Asp Lys Leu Leu Thr Thr Leu Gly Pro Arg
 210 215 220
 Phe Met Gly Pro Ile Ala Ile Leu Arg Ile Trp Ser Phe Cys Leu Phe
 225 230 235 240
 Tyr Val Met Ala Glu Leu Trp Gly Ser Val Val Val Ser Val Leu Phe
 245 250 255
 Trp Gly Phe Ala Asn Gln Ile Thr Thr Val Asp Glu Ala Lys Lys Phe
 260 265 270
 Tyr Pro Leu Phe Gly Ile Gly Ala Asn Val Ala Leu Ile Phe Ser Gly
 275 280 285
 Arg Thr Val Lys Tyr Phe Ser Asn Leu Arg Lys Asn Leu Gly Pro Gly
 290 295 300
 Val Asp Gly Ser Phe Val Glu Ser His Asp Glu His Cys Gly Gly Asn
 305 310 315 320
 Gly Thr Arg Ile Cys Leu Ser Ile Gly Gly Ser Asn Arg Tyr Val Pro
 325 330 335
 Leu Pro Thr Arg Ser Lys Asn Lys Lys Glu Lys Pro Lys Met Gly Thr
 340 345 350
 Met Glu Ser Leu Lys Phe Leu Val Ser Ser Pro Tyr Ile Arg Asp Leu
 355 360 365
 Ala Thr Leu Val Val Ala Tyr Gly Ile Ser Ile Asn Leu Val Glu Val
 370 375 380
 Thr Trp Lys Ser Lys Leu Lys Ala Gln Phe Pro Ser Pro Asn Glu Tyr
 385 390 395 400
 Ser Ala Phe Met Gly Ala Phe Ser Thr Cys Thr Gly Val Ala Thr Phe
 405 410 415
 Thr Met Met Leu Leu Ser Gln Tyr Val Phe Asn Lys Tyr Gly Trp Gly
 420 425 430
 Val Ala Ala Lys Ile Thr Pro Thr Val Leu Leu Leu Thr Gly Val Ala
 435 440 445
 Phe Phe Ser Leu Ile Leu Phe Gly Gly Pro Phe Ala Pro Leu Val Ala
 450 455 460
 Lys Leu Gly Met Thr Pro Leu Leu Ala Ala Val Tyr Val Gly Ala Leu
 465 470 475 480

Gln Asn Ile Phe Ser Lys Ser Ala Lys Tyr Ser Leu Phe Asp Pro Cys
 485 490 495

Lys Glu Met Ala Tyr Ile Pro Leu Asp Glu Asp Thr Lys Val Lys Gly
 500 505 510

Lys Ala Ala Ile Asp Val Val Cys Asn Pro Leu Gly Lys Ser Gly Gly
 515 520 525

Ala Leu Ile Gln Gln Phe Met Ile Leu Ser Phe Gly Ser Leu Ala Asn
 530 535 540

Ser Thr Pro Tyr Leu Gly Met Ile Leu Leu Val Ile Val Thr Ala Trp
 545 550 555 560

Leu Ala Ala Ala Lys Ser Leu Glu Gly Gln Phe Asn Ser Leu Arg Leu
 565 570 575

Lys Lys Ser Leu Arg Arg Lys Trp Arg Glu Leu His Arg
 580 585

<210> 6
 <211> 569
 <212> PRT
 <213> Arabidopsis thaliana

<400> 6
 Met Glu Gly Leu Ile Gln Thr Arg Gly Ile Leu Ser Leu Pro Ala Ser
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His Arg Ser Glu Lys Val Leu Gln Pro Ser His Gly Leu Lys Gln Arg
 20 25 30

Leu Phe Thr Thr Asn Leu Pro Ala Leu Ser Leu Ser Leu Met Val Thr
 35 40 45

Arg Asn Phe Lys Pro Phe Ser Lys Ser His Leu Gly Phe Arg Phe Pro
 50 55 60

Thr Arg Arg Glu Ala Glu Asp Ser Leu Ala Arg Arg Lys Leu Arg Arg
 65 70 75 80

Pro Arg Arg Lys Cys Val Asp Glu Gly Asp Thr Ala Ala Met Ala Val
 85 90 95

Ser Pro Lys Ile Phe Gly Val Glu Val Thr Thr Leu Lys Lys Ile Val
 100 105 110

Pro Leu Gly Leu Met Phe Phe Cys Ile Leu Phe Asn Tyr Thr Ile Leu
 115 120 125

Arg Asp Thr Lys Asp Val Leu Val Val Thr Ala Lys Gly Ser Ser Ala
 130 135 140

Glu Ile Ile Pro Phe Leu Lys Thr Trp Val Asn Val Pro Met Ala Ile

145	150	155	160
Gly Phe Met Leu Leu Tyr Thr Lys Leu Ser Asn Val Leu Ser Lys Lys			
165	170	175	
Ala Leu Phe Tyr Thr Val Ile Val Pro Phe Ile Val Tyr Phe Gly Ala			
180	185	190	
Phe Gly Phe Val Met Tyr Pro Arg Ser Asn Leu Ile Gln Pro Glu Ala			
195	200	205	
Leu Ala Asp Lys Leu Leu Ala Thr Leu Gly Pro Arg Phe Met Gly Pro			
210	215	220	
Leu Ala Ile Met Arg Ile Trp Ser Phe Cys Leu Phe Tyr Val Met Ala			
225	230	235	240
Glu Leu Trp Gly Ser Val Val Val Ser Val Leu Phe Trp Gly Phe Ala			
245	250	255	
Asn Gln Ile Thr Thr Val Asp Glu Ala Lys Lys Phe Tyr Pro Leu Phe			
260	265	270	
Gly Leu Gly Ala Asn Val Ala Leu Ile Phe Ser Gly Arg Thr Val Lys			
275	280	285	
Tyr Phe Ser Asn Met Arg Lys Asn Leu Gly Pro Gly Val Asp Gly Trp			
290	295	300	
Ala Val Ser Leu Lys Ala Met Met Ser Ile Val Val Gly Met Gly Leu			
305	310	315	320
Ala Ile Cys Phe Leu Tyr Trp Trp Val Asn Arg Tyr Val Pro Leu Pro			
325	330	335	
Thr Arg Ser Lys Lys Lys Val Lys Pro Gln Met Gly Thr Met Glu			
340	345	350	
Ser Leu Lys Phe Leu Val Ser Ser Pro Tyr Ile Arg Asp Leu Ala Thr			
355	360	365	
Leu Val Val Ala Tyr Gly Ile Ser Ile Asn Leu Val Glu Val Thr Trp			
370	375	380	
Lys Ser Lys Leu Lys Ser Gln Phe Pro Ser Pro Asn Glu Tyr Ser Ala			
385	390	395	400
Phe Met Gly Asp Phe Ser Thr Cys Thr Gly Ile Ala Thr Phe Thr Met			
405	410	415	
Met Leu Leu Ser Gln Tyr Val Phe Lys Lys Tyr Gly Trp Gly Val Ala			
420	425	430	
Ala Lys Ile Thr Pro Thr Val Leu Leu Leu Thr Gly Val Ala Phe Phe			
435	440	445	
Ser Leu Ile Leu Phe Gly Gly Pro Phe Ala Pro Leu Val Ala Lys Leu			

450	455	460
Gly Met Thr Pro Leu Leu Ala Ala Val Tyr Val Val Val Pro Pro Glu Val		
465	470	475
Ser Ser Ala Arg Val Gln Val Gln His Ser Ser Thr Pro Ser Ala Met		
485	490	495
Gln Glu Cys Leu Tyr Pro Leu Asp Glu Val Ser Lys Val Lys Ala Lys		
500	505	510
Leu Gln Leu Met Trp Ser Ala Thr Ile Gly Lys Ser Gly Gly Ala Leu		
515	520	525
Ile Gln Gln Phe Met Ile Leu Thr Phe Gly Ser Leu Ala Asn Ser Thr		
530	535	540
Pro Tyr Leu Gly Val Ile Leu Leu Gly Ile Val Thr Ala Trp Leu Ala		
545	550	555
Ala Ala Lys Ser Leu Glu Gly Pro Val		
565		

<210> 7

<211> 498

<212> PRT

<213> Rickettsia prowazekii

<400> 7

Met Ser Thr Ser Lys Ser Glu Asn Tyr Leu Ser Glu Leu Arg Lys Ile		
1	5	10
		15

Ile Trp Pro Ile Glu Gln Tyr Glu Asn Lys Lys Phe Leu Pro Leu Ala		
20	25	30

Phe Met Met Phe Cys Ile Leu Leu Asn Tyr Ser Thr Leu Arg Ser Ile		
35	40	45

Lys Asp Gly Phe Val Val Thr Asp Ile Gly Thr Glu Ser Ile Ser Phe		
50	55	60

Leu Lys Thr Tyr Ile Val Leu Pro Ser Ala Val Ile Ala Met Ile Ile		
65	70	75
		80

Tyr Val Lys Leu Cys Asp Ile Leu Lys Gln Glu Asn Val Phe Tyr Val		
85	90	95

Ile Thr Ser Phe Phe Leu Gly Tyr Phe Ala Leu Phe Ala Phe Val Leu		
100	105	110

Tyr Pro Tyr Pro Asp Leu Val His Pro Asp His Lys Thr Ile Glu Ser		
115	120	125

Leu Ser Leu Ala Tyr Pro Asn Phe Lys Trp Phe Ile Lys Ile Val Gly		
130	135	140

Lys Trp Ser Phe Ala Ser Phe Tyr Thr Ile Ala Glu Leu Trp Gly Thr
 145 150 155 160
 Met Met Leu Ser Leu Leu Phe Trp Gln Phe Ala Asn Gln Ile Thr Lys
 165 170 175
 Ile Ala Glu Ala Lys Arg Phe Tyr Ser Met Phe Gly Leu Leu Ala Asn
 180 185 190
 Leu Ala Leu Pro Val Thr Ser Val Val Ile Gly Tyr Phe Leu His Glu
 195 200 205
 Lys Thr Gln Ile Val Ala Glu His Leu Lys Phe Val Pro Leu Phe Val
 210 215 220
 Ile Met Ile Thr Ser Ser Phe Leu Ile Ile Leu Thr Tyr Arg Trp Met
 225 230 235 240
 Asn Lys Asn Val Leu Thr Asp Pro Arg Leu Tyr Asp Pro Ala Leu Val
 245 250 255
 Lys Glu Lys Lys Thr Lys Ala Lys Leu Ser Phe Ile Glu Ser Leu Lys
 260 265 270
 Met Ile Phe Thr Ser Lys Tyr Val Gly Tyr Ile Ala Leu Leu Ile Ile
 275 280 285
 Ala Tyr Gly Val Ser Val Asn Leu Val Glu Gly Val Trp Lys Ser Lys
 290 295 300
 Val Lys Glu Leu Tyr Pro Thr Lys Glu Ala Tyr Thr Ile Tyr Met Gly
 305 310 315 320
 Gln Phe Gln Phe Tyr Gln Gly Trp Val Ala Ile Ala Phe Met Leu Ile
 325 330 335
 Gly Ser Asn Ile Leu Arg Lys Val Ser Trp Leu Thr Ala Ala Met Ile
 340 345 350
 Thr Pro Leu Met Met Phe Ile Thr Gly Ala Ala Phe Phe Ser Phe Ile
 355 360 365
 Phe Phe Asp Ser Val Ile Ala Met Asn Leu Thr Gly Ile Leu Ala Ser
 370 375 380
 Ser Pro Leu Thr Leu Ala Val Met Ile Gly Met Ile Gln Asn Val Leu
 385 390 395 400
 Ser Lys Gly Val Lys Tyr Ser Leu Phe Asp Ala Thr Lys Asn Met Ala
 405 410 415
 Tyr Ile Pro Leu Asp Lys Asp Leu Arg Val Lys Gly Gln Ala Ala Val
 420 425 430
 Glu Val Ile Gly Gly Arg Leu Gly Lys Ser Gly Gly Ala Ile Ile Gln
 435 440 445

Ser Thr Phe Phe Ile Leu Phe Pro Val Phe Gly Phe Ile Glu Ala Thr
450 455 460

Pro Tyr Phe Ala Ser Ile Phe Phe Ile Ile Val Ile Leu Trp Ile Phe
465 470 475 480

Ala Val Lys Gly Leu Asn Lys Glu Tyr Gln Val Leu Val Asn Lys Asn
485 490 495

Glu Lys